# COTTO

Michiana Gem & Mineral Society Tom Noe, Editor 305 Napoleon Blvd. South Bend, IN 46617







**NOVEMBER, 2001** 

### MICHIANA GEM & MINERAL SOCIETY

#### **BOARD OF DIRECTORS**

President.: Don Church 616-651-7616 Vice-Pres: Margaret Heinek 654-3673 Secretary: Sr. Jeanne Finske 284-5903 Treasurer: Bob Heinek 654-3673 Liaison: Sally Peltz 616-683-4088 Past Pres.: Margaret Heinek 654-3673

The purpose of the Michiana Gem & Mineral Society is to promote the study and enjoyment of the earth sciences and the lapidary arts, and to share lapidary knowledge and techniques.

General meetings are held the fourth Sunday of each month, 2:00 PM, EST, at Our Redeemer Lutheran Church, 805 S. 29th St., South Bend, IN. Regular exceptions include May (third Sunday), July (no meeting), August (club picnic) and the November/December meeting and Christmas party. Board meetings are held before the general meetings. The annual club show is Labor Day weekend.

**%**\_\_\_\_\_

Yearly Membership Dues (Payable by January 1) Individual \$10.00 per year
Family \$15.00 per year
Junior \$1.00 per year
Subscriber \$7.50 per year
Please indicate areas of special interest.
General Geology Beads
Gems & MineralsFossils
CabochonsField Trips
Faceting Crystals
Carving Micromounts
OtherJewelry Making
Name
Street
City, ST., Zip
Please send your dues and this form to
Michiana Gem & Mineral Society
c/o Bob Heinek
C/O DOO HOMON

7091 E. East Park Lane, New Carlisle, IN 46552

### **HEADS OF COMMITTEES**

Programs	Margaret Heinek 654-36/3
Hospitality	Pat McLaughlin 259-1501
Educational	Emily Johnson
Librarian	Diane Gram 272-6885
Historian	Ed Miller 498-6513
Sunshine	Sally Peltz 616 683-4088
Publicity	Phyllis Luckert 282-1354
Field Trips	Kathy Miller 291-0332
Membership	All Members

The Michiana Gem & Mineral Society, a notfor-profit organization, is affiliated with the Midwest Federation of Mineralogical Societies and with the American Federation of Mineralogical Societies.

The Rockfinder is published monthly except July and August. Editor, Tom Noe, 305 Napoleon Blvd., South Bend, IN 46617 (ph. 289-2028). Coeditor, Herb Luckert, 221 Marquette Ave., South Bend, IN 46617 (ph. 282-1354). Reporters, Bob Heinek, Herb Luckert, club members.

Dermission is hereby granted to reprint any

original Rockfinder articles, as long as recognition is given along with the reprint.
Additional names:
Name
Birthday
Date of Wedding Anniversary
Phone
PLEASE READ AND SIGN THIS SECTION:
With my signature I hereby release the Michiana Gem and
Mineral Society, Inc., and its individual members and the owners
of any premises upon which I enter under permit granted to the society, absolutely free of any liability whatsoever, to my person
or my property, and further I will respect the equipment and
property of the aforesaid owners.
St 4 Date



# Newsletter of the Michiana Gem & Mineral Society

Volume 41, Number 9

November, 2001

Meeting: No meeting in November. Our

next function will be the combined Christmas party and

meeting on December 2.

Place: Our Redeemer Lutheran Church

805 S. 29th St. (29th & Wall)

South Bend, IN

Program: Fun, food and election of officers

for 2002.

## **DUES ARE DUE**

Please renew immediately, using the instructions on the inside cover of the *Rock-finder*.



# 9 Margaret Schultz15 Kristina Cress

December Birthday

- 15 Carl Simpkins
- 19 Lynn Miller
- 24 Clayton Merrill
- 24 Joan Rosback
- 27 Bess Wise
- 28 Bonnie Brueseke
- 29 Bob Heinek
- 29 Herb Luckert

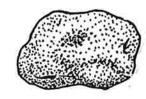
## Anniversary

22 Bob and Judy Heinek





conglomerate



sandstone



shale

# Annual Christmas Party and Meeting

December 2, 2001

All club members are invited to attend the Christmas party and meeting! As you recall, two years ago we made a decision to combine the November monthly meeting with the December Christmas party, instead of having two events so close together. The new schedule is to skip the November meeting and put a small business meeting into the December party.





# Attend the Party in December



Where? The usual meeting place, at the Lutheran church. When? December 2. Gather at 1:30 for socializing and punch. The meal starts at 2:00. Why? Who needs an excuse to have a party? What else? Dress nicely, bring a rock-related gift if you want to participate in the gift exchange, value of \$5.00 or less. Indicate on the gift whether it is most appropriate for a man or woman or anyone. What to bring? The club will provide the meat and drinks. Please bring your own table settings and a potluck dish. Is that all? No, call Margaret beforehand (219-654-3673) to let her know how many to plan for. Everybody welcome!

Call Kathy Miller if you'd like to help set up for the party by decorating tables on Saturday morning—219-291-0332.

#### MINUTES OF THE OCTOBER MEETING

The October meeting of the Michiana Gem & Mineral Society took place on October 28, 2001, in the upstairs meeting room of Our Redeemer Lutheran Church. Don Church, president, called the meeting to order at 2:10 p.m. The September minutes were approved as printed in *The Rockfinder*; the treasurer's report given by Bob Heinek was approved and filed for audit.

New members were introduced: Annitta Hostetler, and four junior members--Naley, Nickolas and Deena Lewandowski and Destiny Szucz.

Kathy Miller made a brief report about the Mazon Creek field trip. She also gave an update about the new Sylvania Fossil Park in Ohio. There is continuing interest in the possibility of a field trip there next year. Several MGM members spoke about experiences they had in visiting the park.

Don and Yvonne Church reported about the Ft. Wayne show, which attracted a large number of children (about 1,700). There was discussion about the advantages and disadvantages of this from the point of view of several exhibitors.

Margaret Heinek read "thank you" letters addressed to the club from the Red Cross in recognition of our donation to the September 11 victims, and from three 4H members who received geology awards sponsored by the club at the summer 4H fair. Volunteers agreed to take part in the February 9, 2002, Science Alive program.

At 2:35 the club tuned the TV to *Open Studio* on WNIT for an interview with David Peltz. David displayed and identified rocks and fossils which he has collected from the South Bend area as a member of the Michiana Gem & Mineral Society. The segment lasted about eight minutes, and David put in a good endorsement for the club.

Vice-President Margaret Heinek announced the proposed slate for next year's officers: Don Church, president; Margaret Heinek, vice-president; Jeanne Finske, secretary; Bob Heinek, treasurer; David Peltz, liaison. It was accepted without additions. Elections will take place at the next meeting.

The Christmas party and December meeting will be held at the church on December 2. Volunteers to contact members for an accurate count of those who will participate include: Jan Horrell, Heidi Santorelli, Margaret Heinek and

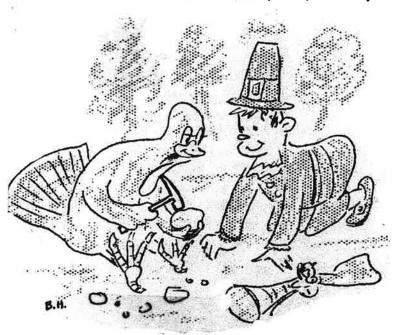
Jeanne Finske. For those who wish to join in the gift exchange, the guidelines are to give something rock-related and under \$5 in value.

The club approved Christmas donations to Our Redeemer Lutheran Church (\$150), and to the Center for the Homeless, the Battered Women's Shelter, and the St. Vincent de Paul Society (\$50 each). It was recommended that old cell phones be donated to the Battered Women's Shelter.

The meeting adjourned at 3:00 p.m. Splendid refreshments and fall table decorations were provided by Bess Wise and Addie Niebauer.

The program consisted of a "show and tell" display of items which members had picked up during the summer or at the Mazon Creek field trip.

M. Jeanne Finske, CSC, Secretary



# HAPPY THANKSGIVING

#### DIAMONDS OF ANCIENT INDIA

By Don Shurtz (10th Place, AFMS 2000 Original Adult Article Contest)

That diamonds were known in ancient India is indisputable. For a major portion of prerecorded and recorded history India was the only supplier of diamonds. It wasn't until 1725 that diamonds were discovered in Brazil, and until 1866 that they were discovered in South Africa. Diamonds are mentioned in some of the early texts of India that date back to the 6th century B.C. But some of the ancient myths and beliefs associated with India and diamonds leave one to wonder.

One of the earliest myths about diamonds is that they have power over magnetism. This appears in some of the earliest Indian stories and was written about in the works of Pliny the Elder. In ancient India, the doors to the temple of Bacchus operated automatically. The doors were opened and closed by an invisible force (magnetism) which was controlled by removing a diamond from the door. Removing the diamond allowed the magnetic and steel mechanism to open or close the door. The myth of diamond's power over magnetism was perpetrated in various writings as late as the 16th century.

Another ancient Indian myth is that the value of a diamond depended on "laghu," or specific lightness (in more modern terms, specific gravity). The most valuable diamonds were pure and transparent octahedrons and able to float on water. The ancient text "Agastimata", written after the 6th century B.C., describes the value of various diamonds. A diamond with a specific gravity 1/4 more than the ideal diamond would be worth only half the value of the ideal diamond, and a stone with a specific gravity 1/2 more than the ideal would be only a quarter the value of the ideal. All diamonds known today have a specific gravity of about 3.52.

Yet another myth from India is the association of different diamonds to the various castes. White or colorless diamonds were associated with the Brahmin, or priest caste. These diamonds were believed to bring the attributes of power, friendship and wealth to the owner. Red diamonds were

associated with the Kshatriya caste, or the warriors and knights. The red diamonds were thought to give eternal youth. To insure the loyalty of their warriors, they were often paid with red diamonds. Since red diamonds are extremely rare, one could wonder where all the red diamonds needed to keep the warriors loyal came from. Yellow diamonds were owned only by the Vaisya, or landowner caste. The yellow diamonds symbolized success. Finally, black diamonds were owned only by the Sudra, or working caste. These black diamonds were thought to bring good fortune.

When you consider some of the myths associated with ancient India and diamonds, especially the myth that the value of the diamond varied according to its specific gravity, you need to wonder what were really considered to be diamonds. The answer probably can be explained in terms of the octahedral shape. The Indians considered the octahedron to be the perfect shape. In the ancient Ratraparisk and Ratna-Sastra texts, the value of stone was first determined by its shape. A perfect stone had to be an octahedron with six sharp points, eight flat sides, and twelve straight edges. After the shape, the value of the stone then depended on its optical properties, including clarity, transparency, color, fire and iridescence. But foremost was the shape. The white or transparent diamonds were undoubtedly what we know as diamonds. The red diamonds, with a specific gravity nearly the same as diamond, were believed to be red spinel, which forms an octahedral crystal. The black diamonds are now regarded as magnetite. Magnetite's crystal form is octahedral, and its specific gravity is about 1/2 more than diamonds. Also, since magnetite is "magnetic." it is believed that it could have been used to control the magnets in the "magnetic doors," thus explaining the myth that "diamonds" had power over magnetism.

#### References:

- 1. Maillard, Robert, ed., Diamonds—Myth, Magic and Reality, Bonanza Books.
- 2. Sofianides, A. and Harlow, G., *Diamonds an Crystals*, Simon and Schuster.

Chips and Chatter (Mar., 2001)

#### THE AGE OF THE EARTH

By Samuel Shapiro

When I retired from 40 years of history teaching in 1991, I took advantage of my new leisure to continue my education in areas outside my former profession, especially in literature and science. I bought a lot of books from the two new giant stores that opened on Grape Road—biographies of Eve Curie, Albert Einstein, Galileo, Kepler, Charles Darwin's *The Origin of Species* (1859) and *The Descent of Man* (1871), all the collected science essays of Stephen J. Gould, books on trilobites, paleobiology, geology, evolution and related subjects—and read them with great pleasure and profit (I have adult-onset diabetes, and a related case of terminal insomnia).

I watched many science programs on PBS (NOVA, National Geographic, etc.). I bought a microscope and a telescope, and went on star-observation outings with the Michiana Astronomical Society. I joined the Michiana Gem and Mineral Society, went fossil hunting in Oxford (Ohio), Grand Rapids (Michigan) and the Mazon Creek strip coal mine in Illinois, and began to write articles for the society's newsletter, The Rockfinder. While I am only an amateur scientist, I am fairly well informed about current developments in several areas. And, with the enthusiasm of an old firehorse who jumps the fence when the fire engine drives past, I tried to share my knowledge with some of my neighbors and acquaintances.

I soon learned that a lot of them don't share my interests and beliefs. I am convinced, for example, that the earth is about four and a half billion years old, and that the swarming life we see all around us evolved from simpler forms by natural selection over that unimaginably long stretch of time. Nearly half of all Americans are convinced that the earth and the plants and animals on it were created in six days about 6,000 years ago.

The people I talked to--a neighbor who edits the magazine *Culture Wars*, the head of a local congregation, a man from Middlebury who put aluminum siding on my house, a preacher who belongs to the exercise club where we work out three times a week, a teacher at the local parochial school, my next-door neighbor, and others--were impervious to argument. Some of the things they said were:

"What difference does it make if the earth is billions of years old or not? What the Bible says is good enough for me.'

"No, I don't want to borrow a tape about Charles Darwin. I don't know anything about evolution, and I don't want to know."

(Shown a drawing of a mastodon, and a photograph of an elephant): "Well, they look alike, but that doesn't prove anything."

(Shown the Andromeda Nebula through my telescope, two million light years away): "How can anybody tell the age of those stars?"

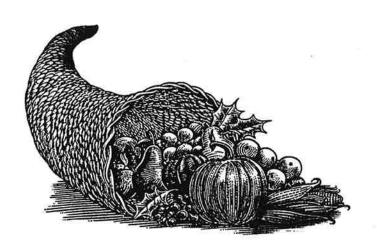
All these people have accepted the five-century-old heliocentric ideas of Copernicus and Galileo (who had trouble with the authorities in their time), but they haven't caught up with Charles Darwin after 150 years.

Stephen J. Gould tries to explain why:

"We have never stopped fighting the same battles, seeking the same solaces, rejecting the same uncomfortable truths. Why are some of us so loath to accept evolution at all, despite the overwhelming evidence? Why are so many...so unwilling, for emotional reasons, to live with it even if we do understand? The situation (is) frustrating for someone like me who has spent a professional lifetime working with the power of Darwinism" ("Darwin and Paley Meet the Invisible Hand," in Eight Little Piggies (1993)).

If a great scientist like Gould cannot convince believers, I think I will give up trying.

234-9648 sshapiro@nd.edu



#### DENDRITE MINERALOGY

Dendrites—crystalline, black, fern-like patterns that resemble forest scenes—have captured the fancy of collectors for centuries. Dendrites, normally deposited on fracture surfaces in rocks, are formed from manganese that has been leached from surrounding rocks and soil by water.

For many years, scientists presumed that dendrites were composed of pyrolusite, a manganese oxide common in ore deposits. However, this mineral identification could not be confirmed because dendrites are formed from crystals so small that they cannot be characterized by X-ray diffraction, the standard diagnostic tool for analyzing minerals.

Recently, California Institute of Technology geochemists George R. Romanian and Russell M. Potter applied infrared spectroscopy, an analytical technique that illuminates mineral samples with infrared radiation, to identify the mineralogy of dendrites. Because specific minerals absorb specific patterns of infrared wavelengths, infrared spectroscopy has become a valuable tool for analysis of very finegrained minerals.

Results of infrared spectroscopy analyses demonstrate that dendrites are formed by any one of several manganese oxides, none of them pyrolusite. Manganese oxides are differentiated on the basis of the internal arrangement of their atoms and the content of some minor elements. For example, the manganese oxide romanechite forms dendrites in pegmatites of the Black Hills region of South Dakota; hollandite dendrites are from Afton Canyon, California; todorokite is found in the gem mines of Pala, California, and cryptomelane is from the southwestern United States. Each dendrite is formed from a specific manganese oxide. No mixing of manganese oxides within the dendrite was observed in the samples tested.

Infrared spectroscopy has also been applied to the analysis of desert varnish. It was found that desert varnish is about 70% fine clay and 30% manganese and iron oxides. The manganese mineral in desert varnish is the oxide bimessite. In comparison, dendrites contain virtually no clay, and none of those analyzed thus far has contained bimessite.

Rocket City Rocks & Gems (Nov., 1999)

#### MINERALS R US

By Millie Heym (2nd Place, 2000 AFMS Poetry Contest)

I looked at the label of my vitamin jar and got a glimpse of what we are: Calcium, magnesium, and more, in all those bottles at the health food store.

The same minerals that make our pretty rocks are the human body's building blocks; no wonder we are drawn to stonesthey're literally in our very bones!

Coral Geode (Mar., 2000)

#### ODDS AND ENDS

FOSSIL GORGE DEDICATED AT IOWA'S CORALVILLE RESERVOIR Omaha World-Herald—6-24-2001—A ceremony was held Saturday to dedicate the Devonian Gorge, where 375-million year-old fossils were uncovered after the 1993 floods. About 1 million people have visited the gorge and a group of scientists raised \$500,000 to make it more visitor friendly.

Rear Trunk (Sept., 2001)

The oldest recorded fall of a meteorite was May 19, 861 A.D. It fell into a Shinto shrine in Japan and is revered to this day.

Rear Trunk (Sept., 2001)

Don't throw away those worn out, used sandpaper discs. Instead, cut a slit up the center, and lay them down like a collar around the stems of your plants. Slugs won't dare to cross the scratchy surface.

Gem Times (June, 2001)

A state trooper pulled a driver to the side of the road and asked him if he realized he was driving without tail lights. Seeing that the motorist was visibly shaken by the news, the officer adde assuringly, "Don't worry, it's not a serious infraction." "It may not be to you, but it is to me. I've lost a trailer, my wife, three kids, and the best darn piece of petrified wood I've found all year!"

Road Runner News (Nov., 1998)

#### THE TURTLE TANK

By Sue Robert (5th Place, AFMS 2000 Original Adult Article Contest)

I had come to the large, rough-hewn log interpretive center at The Grove in Glenview this hot August day to see the turtle tank. Not that I'm so keen on turtles. The open rectangular 16' by 7' tank, just inside the entrance, contained about 25 turtles of eight species and various sizes. They clambered over the logs, rested on the rocks, or swam in the large enclosure. I hadn't come to see the turtles, though. I'd come for the spectacular, museum-class fossils that rimmed the top of the 2-1/2-foot-high wall of the tank. When I entered, several children were leaning over the low wall to get a better view of the turtles. They were resting their weight on huge slabs of fossil bark from the lepidodendron and sigillaria fern trees, leaning their elbows on a three-foot-long Ordovician cephalopod from Minnesota, and pressing their hands into a chunk of Silurian limestone crammed with brachiopods from Thornton Quarry. Twenty-six other prize specimens jutted out at irregular angles from the rim of the tank. Smaller fossils had been tucked in between the larger ones to fill in the spaces in the concrete form.

The Grove is a 123-acre National Historic Landmark located at 1421 N. Milwaukee Avenue in Glenview. The Grove was the home of Robert Kennicott, pioneer naturalist, writer, founder of the Chicago Academy of Science, and collector for the Smithsonian Institution. Robert's family had moved to The Grove in 1836, when he was a year old. The Gothic Revival house, now restored and open to the public, was his home until his death on the banks of the Yukon at age 30. Robert was interested in all aspects of the natural world. Among his extensive collections were thousands of rocks, minerals and fossils from throughout much of North America. Unfortunately the collection was never properly curated and the labels have been destroyed. Most of his collection is now jumbled together in boxes stored on the site and is of little scientific value.

The turtle tanks and other exhibits are housed at The Grove in the impressive 1500-square-foot log interpretive center with a large wraparound porch, which was built in 1989. Stephen Swanson, the Grove naturalist for 22 years and designer of the interpretive center, was the driving force behind the turtle tank. Most nature centers have fossils. They're often pitched on low tables in a collection of "hands on" items for children, along with much-handled bird nests, a set of deer antlers, a few skulls from local mammals and a bit of a bald-faced hornet's nest. Sometimes these unremarkable fossils are kept in a sorry looking display case, often unidentified, collected by an unknown person at an unknown time, from an unknown place. Enter The Grove interpretive center turtle tank!

The turtle tank, constructed 10 years ago and now the dominant feature of the center, was Mr. Swanson's brainchild and his project from start to finish. I was examining with delight the fabulous fossils on the turtle tank, when Mr. Swanson, a tall man, clad in a T-shirt and shorts, entered the center from his work outdoors on his latest project. He had agreed to meet with me and talk a little about his turtle tank. He had searched local quarries for the fossils, designed the tank, mixed the concrete, and set the fossils in place, with some help from volunteers and custodial staff. He wanted the fossils embedded in his turtle tank to be from the sites where Robert There were trips to Kennicott had collected. Thornton Quarry and Lemon, Illinois, to Peeler and GAF, Iowa, and other sites in Illinois, Wisconsin, Iowa and Minnesota. As director of The Grove, he was able to gain access to sites closed to the public. A lot of work and a little luck went into the outstanding collection he assembled. A plaque on the building doorframe bears the names of the six people who donated their time and expertise to this project.

Mr. Swanson had built this fossil tank because he wanted the fossils to be accessible to the children. He wanted the kids to run their fingers over and around them, to stare down at them from inches away, to feel the size and weight of them, and to wonder about them.

Together we drifted around the tank enjoying the fossils. They were identified in the two-page guide I'd taken from the rack on the wall. The sites for most were given. Many of the fossils and sites were familiar to me. For at least a short time on this hot August day, we were just two fossils hunters sharing memories of trips to quarries in the sun and rain, the heat and cold, of unproductive days and great days: and the special rewards of just looking for signs of life, in a past so distant as to be almost incomprehensible.

Mr. Swanson pointed to the sides of the tank. They were also unique. Bronze-colored 2' by 3' panels containing casts of large fossils completely covered the cement tank frame. This, too, had been an experiment. Mr. Swanson and his crew had made wooden frames into which they had placed large fossil ammonites, cephalopods and others. A latex mold of the fossils was made, and the fossils were removed. Molding plaster was poured into the latex mold. The final steps were spray-painting the panels and attaching them to the walls of the tank. Now children not only run their hands over the casts of these large fossils, they also make rubbings of the panels to take home with them.

There are other exhibits in the center for rockhounds to enjoy. Opposite the turtle tank is a case of locally collected Ordovician and Silurian fossils with drawings of a trilobite and a crinoid done by volunteer Jim Kostohrys. High on the wall beside the turtle tank hangs a remarkable rubbing of the skeleton of the huge fossil fish Xiphactinus andax, done at the Field Museum. An exhibit on the geologic periods from Precambrian to present runs the length of the classroom next to the main hall. It is hung on the wall and features fossils from each period. Other cases hold rocks, minerals, Indian artifacts and shells collected by Robert Kennicott. Coming this winter is a new exhibit on the Braidwood area fern fossils. A program on geology entitled "Fire and Ice" is presented to area classrooms of fourth, fifth and sixth graders during the school year. A new program, "Digging Dinos," for all ages begins October 7 and features the fossil collection.

In addition to the geology exhibits, the

building houses a dramatic collection of live loca fish and snakes. Every visitor marvels at "Big Al," the huge 130-year-old snapping turtle from the Mississippi River, who weighs in at 130 pounds. Photos of Robert Kennicott and exhibits on his life and writings hang on walls. The 123-acre site also has trails and special seasonal events. The Grove, including the interpretive center, is open to the public every day year round. The Kennicott house is open most Sundays.

It was almost closing time. Mr. Swanson and I shook hands. I asked him if he still hunted fossils. He smiled and replied, "Not so often, but whenever I can." "Same with me," I said. I wandered around the turtle tank once more. "One man's vision accomplished," I thought. Then I drifted across the wide porch and out into the stifling heat of August.

The Pick and Dop Stick (Nov., 2000)

### EMBARRASSING PREDICTIONS

"A cookie store is a bad idea. Besides, the market research reports say America likes crispy cookies, not soft and chewy cookies like you make."—Response to Debbi Fields's idea of starting Mrs. Fields' Cookies.

"We don't like their sound, and guitar music is on the way out."—Decca Recording Co. rejecting the Beatles, 1962.

"Heavier-than-air flying machines are impossible."
--Lord Kelvin, president, Royal Society, 1895.

"If I had thought about it, I wouldn't have done the experiment. The literature was full of examples that said you can't do this."—Spencer Silver on the work that led to the unique adhesives for 3-M "Post-It" notepads.

"So we went to Atari and said, 'Hey, we've got this amazing thing, even built with some of your parts, and what do you think about funding us? Or we'll give it to you. We just want to do it. Pay our salary, we'll come work for you.' And they said, 'No.' So then we went to Hewlett-Packard, and they said, 'Hey, we don't need you. You haven't got through college yet."
--Apple Computer Inc. founder Steve Jobs on attempts to get Atari and H-P interested in his and Steve Wozniak's personal computer.